1. Determine if each integral below can be evaluated using a method we have learned so far (formula, u-substitution, integration by parts, or trig identities). If so, evaluate the integral. If not, explain why it cannot be evaluated.

   (a) $\int \sin(x^2)dx$.

   (b) $\int \tan^4(x)dx$.

   (c) $\int e^{2x}\sin(3x)dx$.

   (d) $\int \frac{x^2}{(x^2+4)^{3/2}}dx$.

   (e) $\int (x^2+1)e^{2x}dx$.

   (f) $\int \frac{\sqrt{1-x^2}}{x^4}dx$.

   (g) $\int \frac{dx}{e^x\sqrt{e^{2x}-9}}dx$.

   (h) $\int \sin^2(x)\cos^2(x)dx$.

   (i) $\int \frac{x+3}{(x-1)(x^2-4x+4)}dx$.

2. Determine if the following statements below are always true or sometimes false.

   (a) If an integral contains the term $a^2 + x^2$, The best choice is to use the substitution $x = a\sec(x)$.

   (b) If we use the trig substitution $x = \sin(\theta)$, then it is possible that $\sqrt{1-x^2} = -\cos(\theta)$.